

## **JET Meeting Minutes**

November 16, 2011

SC11, Seattle Washington

### **I. Participants**

|                 |                     |  |
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| Jim Williams    | Indiana U           | Williams@indiana.edu   |

### **Action Items**

### **Proceedings**

This meeting of the JET was chaired by Vince Dattoria of DOE/SC and Kevin Thompson of the NSF.

### **JETnet Roundtable**

**DREN: Phil Dykstra**

DREN is in source selection for contracting for its next-generation networking. DREN has been talking with Geln Ricart about U.S. Ignite and GENI. DREN plans to join GENI in San Diego and at other sites. DREN is interested in talking with other GENI participants. DREN is also cooperating on First-Responder networking.

DREN is testing OpenFlow and is interested in working with people who have hands-on experience working with OpenFlow. Discussion identified Mathew Davy and Ron Milford of Indiana University and Inder Monga of ESnet as knowledgeable people.

A U.S. Ignite announcement is expected in December. The details will depend on the FCC spectrum auction results. DREN is working on a Dell R7 replacement. They are using InMon and Hadoop processing with flow data.

**ESnet: Joe Burescia**

ESnet has built out its 100 G network coast-to-coast. The LBL booth is supporting demonstrations over this network. Connectivity includes NERSC, Chicago, ManLan, and Oak Ridge. Using this network, 98 Gbps was demonstrated. See [my.es.net](http://my.es.net) for a description of the 100 G demos at SC11. The network is being supported by OSCARS. All links are being monitored for performance.

**Internet2: Chris Robb**

Internet2 is working with Level3 and ESnet. 8 x 100 G links are being used at SC11. The Salt Lake to Seattle connectivity is in-place for SC11. Internet2 added a 5<sup>th</sup> node to NDDI.

**TransPac**

TransPac has 2 bonded 10 G circuits to Bonn. 2 x 10 G circuits to Frankfurt are in-place but have not been bonded yet. The ACE/Internet2 10 G from Paris to New York City is functioning. A 10 G circuit is completed from Amsterdam to Chicago. A total of 70 G of trans-Atlantic service is in-place.

**ACE:**

A 10 G circuit is deployed between Tokyo and LA. A Beijing to LA circuit is imminent.

**Atlantic-Wave: Julio Ibarra**

The NLR Atlantic-Wave agreement has been extended by one year. The Atlantic-Wave architecture is being reconsidered. The SOX, MAX, MANLAN, NLR, and Internet2 are all connected to South America and Europe. An IRNC link provides connectivity from Sao Paulo to Miami. OpenFlow is being deployed over the Atlantic-Wave network links. Atlantic-Wave is cooperating with Jim Williams and Joe Mambretti on network connectivity.

**Pac-Wave: Jan Evelyth**

The Pac-Wave connection to GLORIAD is being upgraded from 1 G to 10 G. A Chinese link to LA joins Pac-Wave in LA. Pac-Wave and its specific partners in Hawaii and Australia are deploying perfSONAR. Pac-Wave plans to deploy dynamic circuits provisioning over the next year.

Pacific Wave is looking at deploying 100 G. Its equipment (Brocade) is currently capable of supporting 100 G.

**NOAA: Mark Mutz**

The NOAA Ashville circuit is in-place. NOAA plans to have its 5<sup>th</sup> core node operational in December at the Westin building in Seattle

**Northern-Wave**

Northern-Wave received an ARI grant and the Pacific Northwest GigaPoP (PNWGP) plans to provision Level 2 end-to-end service over it in Q1 or Q2 2012. Service would touch StarLight, Seattle, Bozeman, Spokane, Billings, Minneapolis, and Madison. The service will provide vLANS over a 10 G infrastructure. They are working on connectivity to LA.

**NRL: Linden Mercer**

ATDnet is redeploying its BOSnet optical equipment to ATDnet in the metro-DC area including nodes at the U.S. naval Observatory and ONR. It deployed a 100 G link for DISA from Skyline to Fort Meade.

**Florida LambdaRail (FLR)**

FLR is working with Atlantic-Wave on a segment traversing Florida. They are supporting Joe Mambretti for GLIF connectivity. They activated N-Wave at the University of Miami.

**C-Wave: Kevin McGratten**

C-Wave is carrying traffic between South America to Chicago through Florida and supporting traffic to SC11. They will be deploying perfSONAR over C-Wave. This will include IPv6. C-Wave will consult with current deployers of perfSONAR.

**NLR:**

NLR has new management and they are reconsidering services. NLR is moving forward with planning for 40 G and 100 G networking. They are working with GENI and OpenFlow. They are cooperating with A-Wave and Bob Grossman at the University of Chicago. NLR focus in the future will be on healthcare connectivity. NLR is supporting NOAA connectivity to SC11.

**North Carolina**

The MCNC BTOP projects in North Carolina have 98% of their infrastructure deployed. Equipment selection for round 2 BTOP awards is in-process.

**Ames Exchange Point: Bobby Cates**

The Ames Exchange Point is supporting an Open-Cloud Consortium demonstration at SC11. Participants include Lawrence Livermore Laboratory and StarLight. The exchange point will be supporting OpenFlow demonstrations soon. They are working on the NASA overlay virtualization.

**StarLight: Alan Verlo**

StarLight is working with the LHC1 and Dynes communities. They are supporting a wide array of 40 G and 100 G demonstrations at SC11. They are working on an automated GOLE demonstration and converting to the NSI protocol for added flexibility.

**GC12: Joe Mambretti**

They are demonstrating 100 G from Goddard Space Flight Center to Mid Atlantic Crossroads (McLean, Virginia) via ESnet to Seattle (SINET into booth 2615) with a 100 G loop on the show floor. They are constructing StarWave in Chicago, collocated with StarLight. StarWave will provide 100 G wave services nationally and internationally. They currently have 10 requests for connectivity with one request for 3 x 100 G. All vendors are showing up at StarWave. They are testing OpenFlow and working internationally with OGF. They are demonstrating dynamic clouds and coordinating international participation in the GENI testbeds.

**MANLAN: Chris Robb**

MANLAN has been upgraded to a Brocade 100 G switch. It has a 100 G interconnect to Internet2. This link still needs the optics to be deployed.

**PerfSONAR Naming: Rich Carlson**

It is suggested that JET should issue a Best Community Practices (BCP) document on naming tools and services for perfSONAR for IPv4 and IPv6Options include:

- Use a flag to indicate use of IPv4 or IPv6. This provides a name. Do we store an address as well as a name or note it is IPv4 or IPv6? What conventions should we use to uniquely identify if we were using IPv4 or IPv6?
- In the interim use a naming structure. Should there be a standard naming structure or should each agency develop its own unique naming structure?
- Logging: write information into a log file for later access

It was recommended that a white paper, addressing the issues and options, be provided in the early January 2013 time frame. DREN has an existing convention. They identify the host name for IPv4 and the host name for IPv6. A log file provides the host name and address.

**Meetings of interest:**

January 22-25, 2012 ESCC/Internet2 Techs Workshop, Baton Rouge, LA  
January 22-25, 2012 GLIF meeting, Baton Rouge, LA  
January 25-26, 2012 ESCC, Baton Rouge, LA  
February 13-17, 2012 APAN, Chiang-Mai, Thailand  
March 22-23, 2012 US-India workshop on network cooperation, Washington, DC  
April 22-25, 2012 ARIN, Vancouver, BC  
April 23-25, 2012 Internet2 Spring Member Meeting, Arlington, VA  
Week of January 13th, 2013 Techs in Paradise (APAN, Jt Techs & ESCC), Honolulu, HI

**Next JET Meetings**

December 20, 11:00-2:00, Canceled

January 24, 2012, 7:45-10:15 PM CST, Baton Rouge, LA: Held in conjunction with the Winter Jt Techs